

Physical Activity and Quality of Life in the Island Community of Pulau Manado Tua

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Abstract

Original Research Article

The quality of life of elderly is a form of satisfaction with the needs of the elderly, which can be influenced by various factors such as physical health, psychological health, social relationships, and environment. In elderly, weaknesses, limitations, and disabilities in performing daily activities can result in a decline in quality of life. The increase in the number of elderly population in Indonesia is also accompanied by an increase in the issues faced by the elderly, which impact the decline in quality of life. Physical activity is one of various factors that influence quality of life. The elderly living in island areas may have a lifestyle that differs from those living in urban areas, which can impact the quality of life experienced by the elderly. Pulau Manado Tua is an island area that is part of the Manado City in North Sulawesi Province, Indonesia. With 141 respondents, this study measures the level of physical activity and quality of life among the elderly in island areas. The research design was cross-sectional study of the elderly population in Pulau Manado Tua. Data collection methods include using the IPAQ questionnaire to measure physical activity and EQ-5D to measure quality of life. Univariate and bivariate analyses were conducted using appropriate statistical tests. The main results indicate a relationship between physical activity and quality of life in the community of Pulau Manado Tua. It is hoped that the results of this study can serve as a basis for the formulation of health policies related to quality of life and its influencing factors.

Keywords: Physical activity, quality of life, island community, Manado Tua.

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INTRODUCTION

Southeast Asia ranks lowest in quality of life among five other regions, while European countries top the list (Numbeo, 2019). According to the Human Development Index Ranking 2020 by the United Nations Development Programme (UNDP), Indonesia is ranked 107th out of 189 countries with an index of 0.718. The Human Development Index (HDI) for the 34 provinces in Indonesia in 2020 indicates that Jakarta has the highest HDI at 80.77, while North Sulawesi Province ranks seventh with a score of 72.93. In North Sulawesi, the district or city with the highest quality of life is Manado City, scoring 78.93. However, research focusing on the quality of life in island areas is still limited.

The quality of life of the elderly reflects satisfaction with their needs, influenced by various factors such as physical health, psychological health,

social relationships, and the environment (Ekasari *et al.*, 2018). For the elderly, weakness, limitations, and disabilities in daily activities can lead to a decline in quality of life (Yulianti *et al.*, 2014). The increasing elderly population in Indonesia is accompanied by rising issues faced by the elderly, impacting the decline in quality of life (Pratiwi, 2015). Previous research has found that many elderly individuals cannot engage in activities for long or are confined to home, leading to feelings of anxiety and stress, ultimately affecting their quality of life (Malamtiga *et al.*, 2017). Another study discovered numerous complaints from the elderly regarding limitations in physical activity, frequent illness, and lack of confidence in their physical appearance, all of which impact their quality of life (Tinungki *et al.*, 2017).

Physical activity is one of several factors influencing quality of life. CDC data indicates that

overall, 27.5% of adults aged >50 years reported no physical activity outside of work in the last month. The prevalence of inactivity significantly increases with age, reaching 25.4% among adults aged 50-64, 26.9% among those aged 65-74, and 35.3% among adults aged ≥75 (CDC, 2016). Lack of physical activity in the elderly can lead to physical and psychological decline, affecting their quality of life. The World Health Organization (WHO) emphasizes the importance of increasing physical activity to improve the quality of life of the elderly in the "Global Recommendation on Physical Activity for Health." Current healthcare efforts are aimed at improving quality of life, especially for the elderly (Kementrian Kesehatan Indonesia, 2017). Given the increasing elderly population in Indonesia, the Ministry of Social Affairs has implemented programs aimed at creating a conducive environment for the elderly, improving their physical needs, psychological well-being, cognitive activities, or daily physical activities to enhance their overall quality of life (Kementrian Sosial Indonesia, 2019).

Elderly individuals residing in island areas may have a different lifestyle than those in urban areas. With a more active lifestyle, the level of physical activity can be higher than in urban communities, potentially leading to a better quality of life. Pulau Manado Tua is an island area within under Manado city jurisdiction, with two hundreds and eighty five elderly residing in the island. However, there has been no study measuring the level of quality of life among the elderly in this region. Therefore, the researcher is interested in conducting this study in the area.

MATERIALS AND METHODS

This research employs an analytical descriptive approach with a cross-sectional research design, utilizing the European Quality of Life 5 Dimensions 5 Level Version (EQ-5D-5L) for assessing quality of life and the International Physical Activity Questionnaire (IPAQ) for measuring physical activity. The study is conducted on Pulau Manado Tua. The sample consisted of elderly individuals who are willing to participate and have provided their consent by signing the permission form. The collected data is analyzed incorporating both univariate and bivariate analyses using the Chi-Square test.

RESULTS AND DISCUSSION

The respondents in this study amounted to 141 individuals who are elderly residents of Manado Tua. Data collection was conducted using the European Quality of Life 5 Dimensions 5 Level Version (EQ-5D-5L) questionnaire for assessing quality of life and the International Physical Activity Questionnaire (IPAQ) for measuring physical activity.

Univariate Analysis

Table 1: Distribution of Respondents Based on Gender

Gender	Total	Percentage (%)
Male	47	33
Female	94	66
Total	141	100

The gender distribution of respondents in Table 1 reveals that there are 94 females and 47 males out of a total of 141 respondents. There are more female respondents compared to males. This difference in numbers is largely attributed to the fact that many male residents were at work during the interviews, potentially engaged in the fishing sector or other local industries.

Table 2: Distribution of Respondents Based on Employment Status

Employment	Total	Percentage (%)
Housewife	83	58,9
Community Leader	4	1,4
Fisherman	30	21,3
Clergy	2	1,4
Retiree	7	5,0
Farmer	4	2,8
Civil Servant (PNS)	2	1,4
Builder	5	3,5
Entrepreneur	4	2,8
Total	141	100

From the research results, it is evident that the majority of participants are housewives, totaling 83 individuals, and fishermen, totaling 30 individuals out of the total 141 respondents. This indicates that a significant number of participants in this study are housewives and fishermen. This fact provides a clearer picture of how physical activity and quality of life may vary among the community in Pulau Manado Tua, depending on their occupations. It is important to note that the diversity in employment status can have a significant impact on the patterns of physical activity and quality of life in island communities. The presence of a considerable number of housewives and fishermen in this study provides a rich perspective on time management and physical activity, enriching our understanding of the relationship between employment status, physical activity, and quality of life in Pulau Manado Tua.

Table 3: Distribution of Respondents Based on Highest Education Level

Highest Education Level	Total	Percentage (%)
Elementary School	56	39,7
Junior High School	53	37,6
Senior High School	29	20,6
Bachelor's Degree	3	2,1
Total	141	100

Distribution of respondents based on the highest education level in Table 5 shows that a considerable number (39.7%) of respondents had the last education level of Elementary School (SD). Following closely is Junior High School (SMP) with 37.6%, and it is followed

by Senior High School (SMA) and Bachelor's Degree (S1) with percentages of 20.6% and 2.1%, respectively. Based on the last education level, it indicates that the education level of the community in Pulau Manado Tua is still relatively low. This could be attributed to various factors such as limited access to education, poverty, and cultural aspects (Giovanni, 2018). The limitation of education access in island areas poses serious challenges in improving the education level of the community. Geographic factors and challenging transportation can hinder children and adolescents from easily accessing schools. This situation may lead to a low participation rate in formal education among island residents (Hadiyat, 2014).

Furthermore, the limitation of educational facilities and the lack of qualified educators can exacerbate the situation. Many schools in island regions might lack adequate resources, including textbooks, learning tools, or laboratories, which can impact the quality of education received by the community (Lellola *et al.*, 2018). The impact of the low education level in these islands involves various aspects of community life, including limited job opportunities (Mulyadi, 2017), insufficient health knowledge, and restricted access to information. Therefore, it is crucial to carefully understand these challenges and seek solutions to improve educational accessibility in island regions to support an enhancement in the quality of life.

Table 4: Level of Physical Activities

Physical Activity	Total	Percentage (%)
Light	0	0
Moderate	36	25,5
Intense	105	74,5
Total	141	100

The majority of respondents in Pulau Manado Tua showed to be engaged in intense physical activities as part of their daily routines. The geographical conditions and daily life in these islands may encourage the community to participate in physically demanding activities that require endurance and strength. These intense physical activities may include work in the fishing sector, agriculture, or other physically demanding occupations that support the sustainability of life on the island (Palit *et al.*, 2021).

Table 5: Quality of Life Based on Mobility Score

Mobility Score	Total	Percentage (%)
5	0	0
4	4	2,8
3	23	16,3
2	44	31,2
1	70	49,6
Total	141	100

The mobility score of quality of life among respondents shows that a majority of them, 70 individuals out of 141 respondents, experience no

difficulty, indicating a high level of mobility. High mobility without difficulties implies good physical capability among them. This result can provide a positive outlook on physical health and the ability to smoothly carry out daily activities. Good mobility can impact independence, participation in social activities, and overall well-being (Maulina, 2014). However, it is essential to note that these results can be influenced by various factors, including individual health conditions and environmental factors in Pulau Manado Tua. Further, a thorough understanding of the relationship between mobility and quality of life in this region can serve as a foundation for the development of programs and policies that support the well-being of island communities.

Table 6: Quality of Life Based on Self-Care Score

Self- Care Score	Total	Percentage (%)
5	0	0
4	2	1,4
3	5	3,5
2	8	5,7
1	126	89,4
Total	141	100%

Table 6 shows the overview of self-care quality of life, where the majority of respondents, namely 126 out of a total of 141 respondents, are capable of self-care without experiencing any difficulties. This result indicates a high level of independence among the population, with the ability to effectively take care of themselves. This condition can contribute positively to overall quality of life, creating a sense of independence and satisfaction in carrying out daily activities without hindrance (Ekasari *et al.*, 2019).

Table 7: Quality of Life Based on Daily Activity Score

Daily Activities Score	Total	Percentage (%)
5	0	0
4	2	1,5
3	25	17,7
2	33	23,4
1	81	57,4
Total	141	100%

The research results indicate that the majority of respondents, 81 individuals (57.4%) out of the total 141 respondents, do not experience difficulties in performing daily activities. This information indicates a level of capability and efficiency in carrying out routine activities, which can contribute positively to the quality of life and well-being of the community in Pulau Manado Tua. The ability to perform daily tasks without difficulty implies the creation of an environment that supports overall productivity and well-being.

Table 8: Quality of Life Based on Pain/Discomfort Score

Pain/Discomfort Score	Total	Percentage (%)
5	6	4,3

4	29	20,6
3	34	24,1
2	48	34
1	24	17
Total	141	100%

The research results from Table 8 regarding the overview of quality of life in the Pain/Discomfort dimension show that the majority of respondents, 48 individuals (34%) out of the total 141 respondents, reported experiencing lower levels of pain or discomfort. This information reflects that the majority of the community in Pulau Manado Tua experiences a relatively low level of discomfort, which can contribute to higher levels of well-being in the context of health and quality of life.

Table 9: Quality of Life Based on Anxiety Score

Anxiety Score	Total	Percentage (%)
5	3	2,1
4	13	9,2
3	24	17,0
2	40	28,4
1	61	43,3
Total	83	100%

The research results show an overview of the quality of life in the Anxiety dimension, where the majority of respondents, 61 individuals out of the total 141 respondents, reported that they do not feel anxious. This information reflects a positive level of psychological well-being among the community in Pulau Manado Tua, with the majority of respondents not experiencing significant levels of anxiety. This phenomenon could reflect the success of social support systems, mental health policies, or other factors that support the mental well-being of the community in the region.

Bivariate Analysis

The bivariate analysis result in this study indicates that there is a significant relationship between physical activity and quality of life, with a p-value of 0.035 (p<0.05). This implies a significant correlation between physical activity and the quality of life among the community in the island region. Physical activity has the ability to stimulate a decrease in sympathetic nervous system activity and an increase in parasympathetic activity, resulting in a reduction of adrenaline, norepinephrine, and catecholamines hormones. When engaged in physical activity, muscles require energy beyond the metabolic process for movement, while the heart and lungs need additional energy to deliver nutrients and oxygen to the entire body and eliminate metabolic waste. The energy requirement is determined by how actively the muscles move, the duration of the activity, and the intensity of the work performed (Nurmalitta, 2017). In principle, physical activity involves movements of body parts that generate energy

expenditure, playing a crucial role in maintaining both physical and mental health and ensuring a high quality of life throughout the day (Purnama & Suhada, 2019).

Physical inactivity can be a cause of chronic diseases in the elderly, such as hypertension, stroke, heart disease, diabetes mellitus, and cancer. Elsaywy & Higgins (2010) note that regular participation in sports, accompanied by improved aerobic fitness, can reduce the risk of these diseases, lower mortality rates, and enhance the quality of life in the elderly. Therefore, engaging in regular physical activity, such as low-intensity aerobic exercise for at least 30 minutes once a week, can be a positive step to improve the quality of life for the elderly. Additionally, religious activities like attending mosque events or neighborly gatherings, involvement in grandchild care, and participating in morning and evening household cleanliness activities are considered forms of physical activity that contribute positively to the quality of life for the elderly.

According to Rohmah *et al.*, (2012), the majority of elderly experienced a moderate level of quality of life (58%). Generally, the quality of life tends to decline with age due to physical, mental, and psychosocial changes. As a consequence, the elderly often feel dissatisfied with their conditions. Factors such as living far from family can also lead to loneliness, ultimately affecting the motivation of the elderly to engage in daily activities.

Sarafino & Smith (2011) emphasize the urgency of quality of life in the context of disease prevention and healing processes. Optimal quality of life has the potential to enhance an individual's resistance to illness and expedite the healing process. Therefore, caring for quality of life is not only related to efforts to maintain health but is also a crucial step in preventing the onset of diseases.

This study is supported by Habsari (2014) and Wenas, *et al.*, (2018), who found a significant correlation between physical activity and quality of life. Through participation in physical activities, there is the potential to extend life expectancy. Dewi (2018) and Maukar, *et al.*, (2021) also indicates that a high level of physical activity has a positive relationship with quality of life, both in terms of physical and mental health. These findings confirm previous research results showing that active participation in physical activities in the elderly is associated with optimal physical health.

Chiquita (2017) highlights a meaningful positive relationship between daily physical activity and quality of life. When the elderly can independently carry out their physical activities, it positively impacts the improvement of their quality of life. Therefore, by regularly and independently engaging in physical activity routines, it can be expected that the life expectancy of the elderly will increase.

CONCLUSION

It can be concluded that there is a significant relationship between physical activity and quality of life in the community, especially among the elderly, in Pulau Manado Tua. As a recommendation, the researchers suggest that the government continues to collaborate with the local community to promote programs aimed at improving physical activity in the population. Additionally, individuals are encouraged to maintain active lifestyles through regular movement and exercise.

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